

Remarks

Claims 1-13 were pending.

Claims 1, 4 and 13 are amended.

Claims 2, 3 and 5-8 are cancelled.

Claim 10 is original.

Claims 9, 11 and 12 are as previously presented.

The application now contains claims 1, 4 and 9-13.

Claim 1 is amended to more fully define components a-e of the pigment composition by incorporating limitations from original claims 2, 3 and 5-8 and material from the specification, i.e., the percent ranges from page 2, lines 4-7 and the ammonium salt description from page 4, lines 14-15. The inclusion of the term "weight based on the weight of the composition" is supported by the specification on page 2 line 7 and the examples where the percentages listed for the compositions add up to 100%. Claim 1 is also amended to correct the spelling of "synergistic".

Claim 4 is amended to be dependent on claim 1 and to delete the phrase "of a molecular weight range of 500 to 100'000". Although broader than before, amended claim 4 still represents a further limiting of claim 1.

Claim 13 is amended to be dependent on claim 1.

No new matter is added.

Rejections

Claims 1-13 are rejected under 35 USC 112 first paragraph as not being enabling for the full breadth of what the Action refers to as the infinite number of hyperdispersants, synergistic additives and modified rosins encompassed by the claims as written. Claim 5 is are rejected under 35 USC 112 first paragraph as not being enabling for what the Action refers to as the infinite number of possible substituted amine salts that are a part of the synergistic additive.

Applicants respectfully traverse the rejections.

Claim 1 has been amended to limit the hyperdispersants, synergistic additives and modified rosins to those materials that are described by the specification. The types of materials in question are common items of commerce and methods of their use are well known to the practitioner.

Regarding the "substituted ammonium salts" of original claim 5 which are now part of instantly amended claim 1, Applicants first note that the salts are but one of the descriptors limiting the type of synergistic additive used in the invention. Synergistic additives are a well known commercial class of materials which improve pigment dispersion and stability. For example, US 6,099,631, cited as described below in the Action, claims in claim 10 a "mill base further comprising a synergist". Applicants enclose a copy of the technical data sheet for SOLSPERSE 12000, described therein as a pigmentary synergistic additive defined in the section labeled "performance".

The synergistic additive of the instantly amended claims are limited to those that are asymmetric disazo compounds with a central divalent group free from ionic substituents, linked through azo groups to two monovalent end groups, one being free from any ionic groups and the other being a substituted ammonium carboxylate, phosphonate or sulfonate salt. Applicants respectfully aver that this provides sufficient detail to the trained practitioner as to the type of additive being used, particularly with the additional guidance provided in the discussion beginning paragraph 5 of page 3 and continuing through page 4 of the specification. Applicants believe that a skilled practitioner would have no difficulty in discerning whether a synergistic additive as understood in the art and met the limitations of the instantly amended claims and see no reason to expect why an additive which met the limitations would fail to perform as expected.

In light of the amendments and discussions above, Applicants respectfully submit that the rejections under 35 USC 112 first paragraph are addressed and are overcome and kindly ask that they be withdrawn.

Claims 1-13 are rejected under 35 USC 112 second paragraph for being indefinite as defined in sections A-E of page 6 and 7 of the Action.

Applicants respectfully traverse the rejections as follows:

Regarding section A on page 6 of the Action, Applicants have amended the claims to add physical limitations to the compounds that serve as the synergistic additive. Applicants also respectfully assert that this class of materials is well known in the field, for example, US 6,099,631, cited as described below in the Action, claims in claim 10 a "mill base further comprising a synergist". Also enclosed is a copy of the technical data sheet for SOLSPERSE 12000, described therein as a pigmentary synergistic additive, which is defined in the section labeled performance as an agent to be used with a dispersant improve pigment dispersion and stability. Applicants respectfully submit that one skilled in the art would readily understand which materials are being described by the claim language in light of the additional detail provided by the specification on pages 3 and 4 and by the examples.

Regarding sections B and C on page 6, references to the terms "molecular weight" and "100'000" are deleted. Regarding section D on page 7, the instantly amended claims recite a percent by weight based on the weight of the composition. Regarding section E on page 7, the instantly amended claims list a maximum for component e of 30%.

In light of the amendments and discussions above, Applicants respectfully submit that the rejections under 35 USC 112 second paragraph are addressed and are overcome and kindly ask that they be withdrawn.

Claims 1-13 are rejected under 35 USC 102(b) as being anticipated by Tregub et.al., US 6,099,631.

Applicants respectfully traverse the rejections.

The compositions of Tregub do not contain rosin or a modified rosin as now explicitly required by the instantly amended claims (2 to 30% by weight of the composition). Applicants further note that the ratio between the dispersing agent and synergist varies from 4:1 to 9:1 in Tregub column 4, lines 13 and 14, whereas the ratio in amended claim 1 is at most 3:1.

Applicants therefore respectfully submit that in light of the above amendments no anticipation by US 6,099,631 exists and kindly ask that the rejections under 35 USC 102(b) be withdrawn.

Claims 1-13 are rejected under 35 USC 103(a) as being obvious over Tregub et.al., US 6,099,631.

Applicants respectfully traverse the rejections.

Applicants respectfully note that the instantly amended claims define a composition different from that of Tregub as described above.

Applicants further respectfully note that Tregub discloses a process for the preparation of pigmented solid inks, (e.g., Abstract). Applicants also disagree with the assertion that the composition of Tregub "would appear to be useful in lithographic inks when melted, as detailed below.

The process of Tregub includes 4 steps:

- (a) combining a pigment and a liquid solvent to form a pigment solution;
- (b) combining the pigment solution with a plasticizer to form a mill base;
- (c) preparing the color concentrate from the mill base and
- (d) preparing an ink from the color concentrate.

The compositions of Tregub are designed to improve the milling process for obtaining a better pigment dispersion in a shorter time using relatively simple milling equipment (column 1, lines 29 to 31 of the reference).

The instant compositions are different, and are designed to be different as they are designed for use in oil base lithography printing as opposed to the pigmented solid inks of Tregub. Applicants note the following differences between the two technologies.

Hot melt inks are used in for example Ink jet applications. They are wax and polymer binders (e.g. Polyamides) with pigments that have suitable melt points and properties of viscosity in the molten state. The cooling rate can and must be controlled. They are used in gravure and are applied to porous substrates as the dots are in relief to the substrate. The ink is applied and solidifies on cooling. Solvent release and oxidation are reduced although the inks must be coloristically stable to color loss when hot. Applicants note that the process of claim 1 of Tregub requires as step b the presence of a plasticizer.

Despite the statements in column 4, line 32 (0 to 85% of plasticizer) as well as lines 47 and 48 (0 to 90% of wax) it could be clearly seen that either a plasticizer or a wax must be present (e.g., column 4, lines 26 and 27 of Tregub where the color concentrate is prepared by diluting or letting down the mill base with a solid plasticizer and/or waxes). Further, all the Examples given in Tables 1.1 to 2.6 contain either plasticizer (see Tables 1.1, 1.2 1.3 and 2.6) or wax (Tables 1.4, 1.5, 1.6, 2.2, 2.3, 2.4 and 2.5) or both of them (Table 2.1). Thus, the presence of a plasticizer or a wax is a relevant feature of the mill base, color concentrate and proximate inks of the reference.

In contrast, the presently claimed pigment composition is designed for oil-based lithographic printing inks (paragraph 1, page 1), that is, inks which are liquid at room temperature. As widely known in the art, these inks are based on oil based raw materials including distillate oil solvents. As such they are hydrophobic in nature. The litho printing process involves an image and non-image area on the printing plate. The latter has a surface polarity controlled to attract a water-based fountain solution that may contain buffers and water soluble co-solvents. The printing process requires the ink to have specific coloristic-, tack-, viscosity- and water pick-up characteristics and the printing is cured mostly by drying in a stove or ink penetration into paper. Some of the resins are air oxidized thus forming a printed film.

The specification refers briefly to the process on page 1 paragraph 2 and in greater detail when discussing the benefits of the instant invention on page 6, last paragraph through the middle of page 7.

Applicants respectfully maintain that it can easily be seen from the above discussion that the inks used in the lithography requires entirely different features than the hot melt ink of the reference.

Applicants also respectfully point out that US-A-6,099,631 is completely silent regarding a lithography printing ink, but refers repeatedly to solid pigment inks. Applicants thus respectfully disagree with the Examiner that Tregub could suggest an oil based lithographic ink as discussed throughout the instant application and suggest therefore that one skilled in the art looking for a new pigment composition suitable for oil-based lithographic printing inks would not take this reference into consideration.

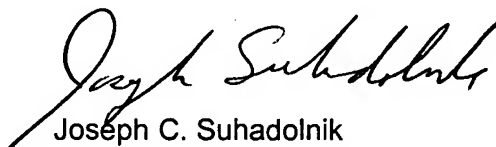
Applicants therefore respectfully submit that Tregub fails to meet the limitations of the instantly amended claims, teaches a process directed at preparing a different ink used in a different printing process and presents no teaching relative to oil-based lithographic printing inks of the instant invention.

Applicants respectfully submit that the rejections under 35 USC 103(a) over Tregub et.al., US 6,099,631 have been addressed and overcome and kindly ask that the rejections be withdrawn.

Applicants respectfully submit that all objections and rejections have been addressed and are overcome and kindly ask that they be withdrawn and that claims 1, 4 and 9-13 be found allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Enclosed: technical data sheet for SOLSPERSE 12000

SOLSPERSE® 12000

A 100% active pigmentary synergist

Lubrizol
TECHNICAL DATA SHEET

Applications	<ul style="list-style-type: none">• Water-based inks• Flexographic inks• Water-based paints								
Performance	<p>SOLSPERSE 12000 is a 100% active pigmentary synergist agent used in conjunction with a SOLSPERSE polymeric dispersant to improve pigment dispersion and stability.</p> <p>In the above applications, the following benefits are achieved:</p> <ul style="list-style-type: none">• Increased pigment concentration• Improved rheological characteristics• Improved pigment stabilization• Increased tintorial properties								
Incorporation	<p>The SOLSPERSE 12000 should be added to the polymeric SOLSPERSE / resin / solvent mixture and distributed evenly with stirring. Add the pigment in stages, then mill in the normal manner.</p>								
Addition levels	<p>The amount of SOLSPERSE synergist required is related to the particular pigment being dispersed; and is quoted as a ratio of polymeric / synergist.</p> <p>Used in ratios of 1:2, 1:4 or 1:9 SOLSPERSE 12000 Polymeric SOLSPERSE. See literature for guidance.</p>								
Typical properties	<table><tr><td>Appearance</td><td>blue powder</td></tr><tr><td>Melting point (°C)</td><td>>250</td></tr><tr><td>Density (g/cm³)</td><td>1.67</td></tr><tr><td></td><td></td></tr></table>	Appearance	blue powder	Melting point (°C)	>250	Density (g/cm ³)	1.67		
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Packaging and storage	SOLSPERSE 12000 is packed in 25Kg boxes. Shelf life: 10 years. For storage, please refer to the MSDS.
Regulatory status	For detailed information, please refer to the MSDS.